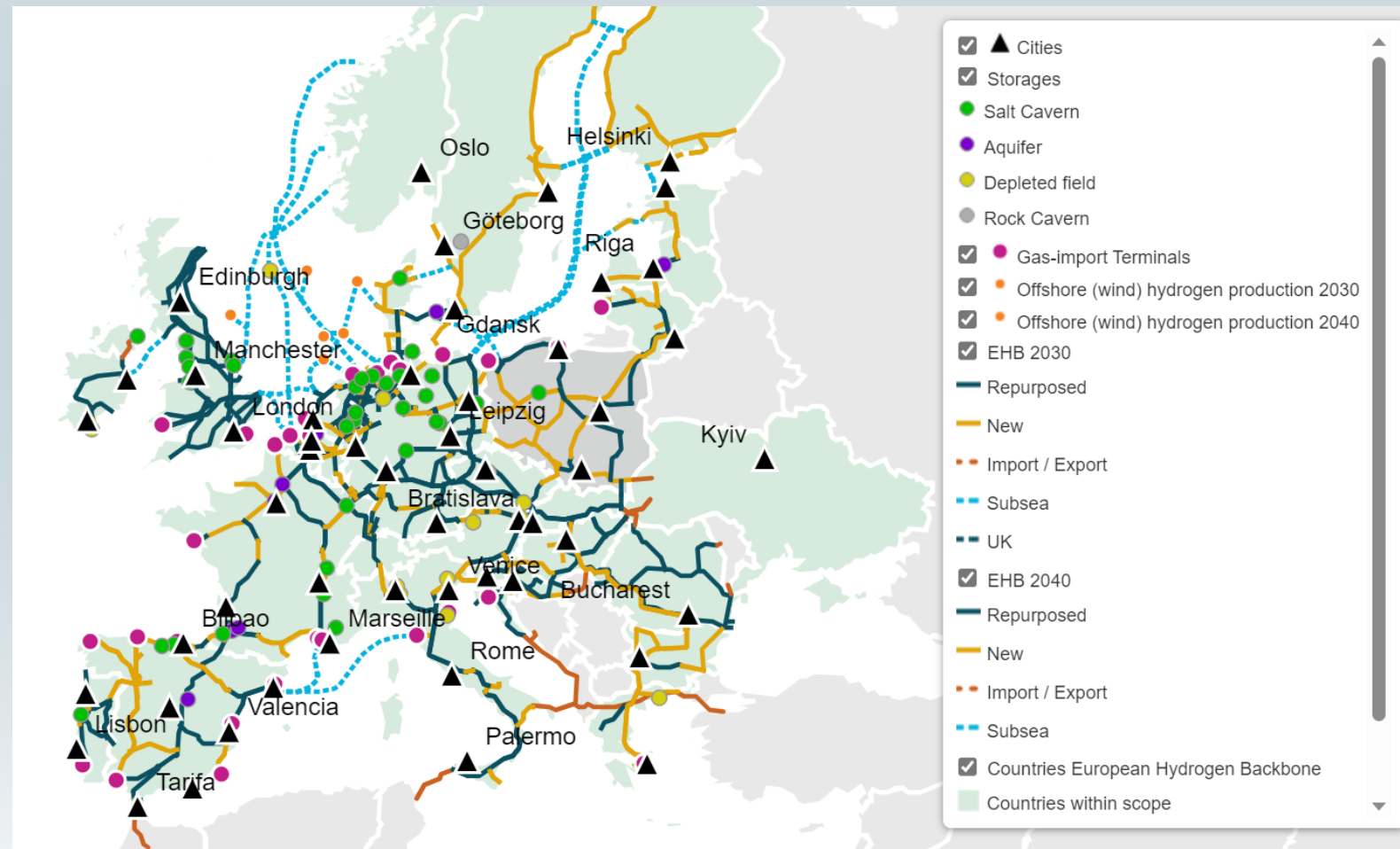


# Challenges and opportunities for hydrogen infrastructure planning in Europe

Irina Fix (GASCADE Gastransport GmbH)

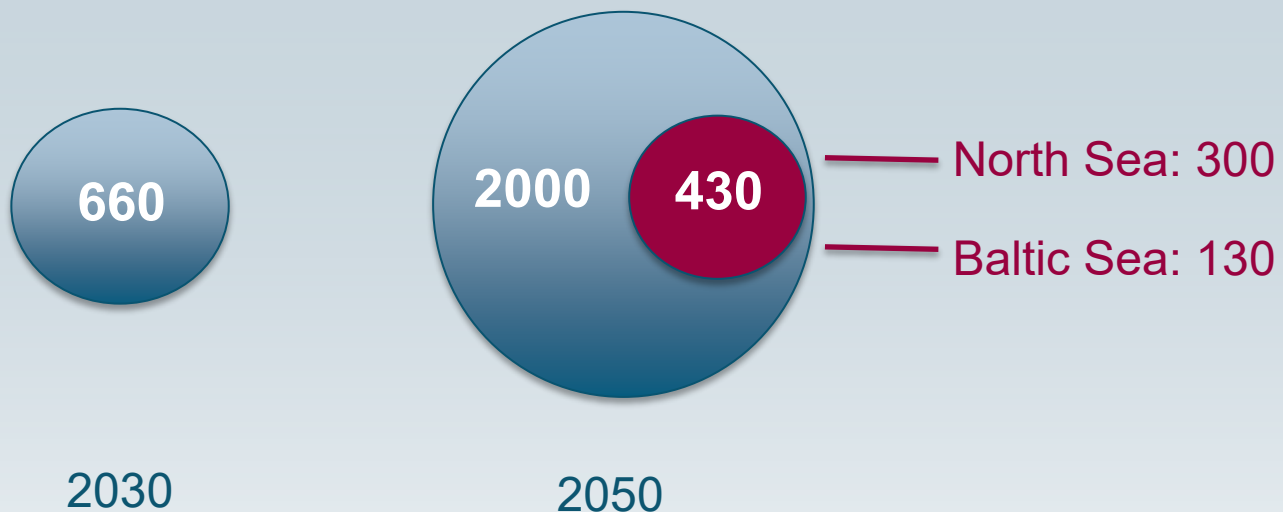
## From a vision to a mission

- Infrastructure development planning plays an important role in the ramp-up of the hydrogen market
- Creation of cross-border infrastructure sends important signals to market participants, project developers, and downstream end-users
- Offshore import corridors crucial for the planning of the onshore grid



## Offshore hydrogen potential in the North & Baltic Sea

- EU hydrogen demand (TWh/a)
- Offshore hydrogen potential in the North & Baltic Sea (TWh/a)



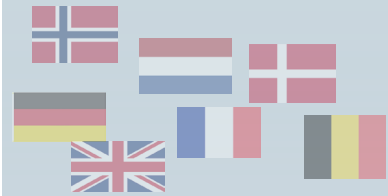
Hydrogen production in the North and Baltic Sea can supply **over 20%** of EU needs!

## Coordination is key!

- ! European coordination of electricity and hydrogen potentials
- ! Same principles of regulation for onshore and offshore grids
- ! Offshore landfall capacity must be considered in onshore grid planning
- ! European H2 offshore regulation and grid planning needed



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## Challenges

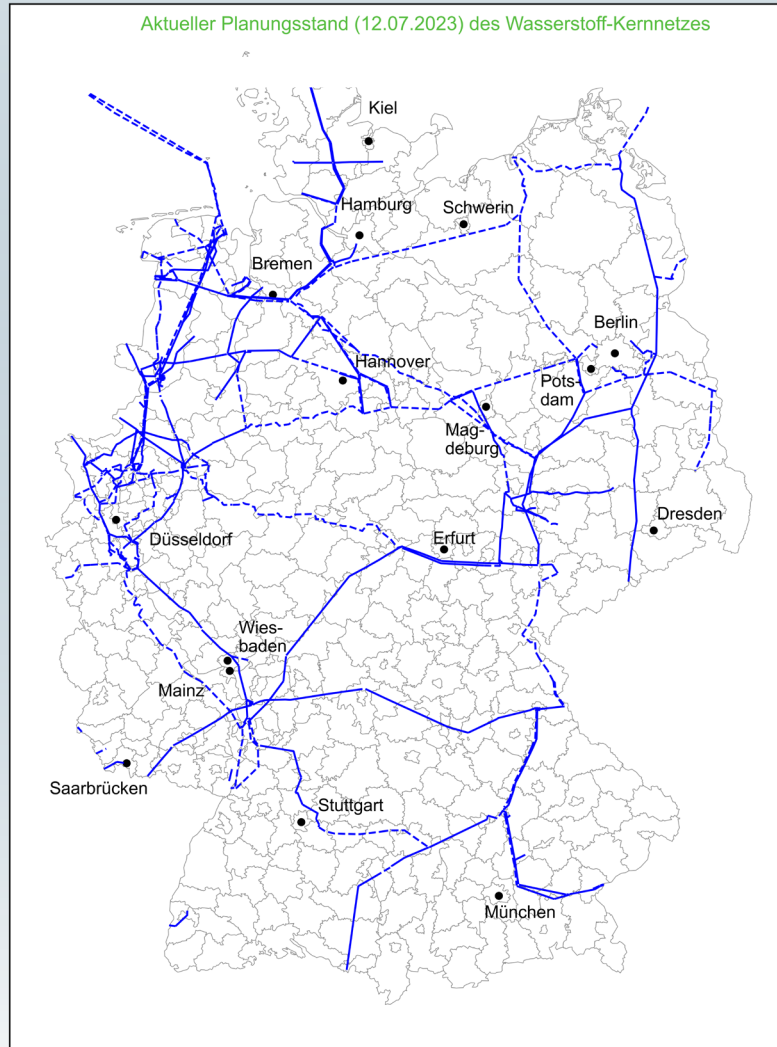
- Current planning and investment barriers for hydrogen infrastructure („chicken-egg problem“)
  - H2 market does not yet exist / uncertainties regarding H2 transport needs
  - Regulatory framework still under discussion
  - So far no risk protection for investors



### **Principles for covering funding gaps in the ramp-up phase needed**

- Favors rapid market ramp-up
- Increases industry's willingness to invest in green processes
- Minimizes risk for first-movers
- Contributes to a competitive hydrogen price

# Germany's „H2 Core Grid“ – kick starting the hydrogen market!



State: 12. July 2023

— Umstellungsleitung  
- - - Neubauleitung

- Publication of interim results by German Gas TSOs in July 2023
- H2 Core Grid for 2032 includes:
  - Projects with IPCEI, PCI status
  - Projects for the decarbonization of selected branches of industry: iron/steel, chemicals, refineries, glass industry
  - Consideration of CHP power plant sites
- H2 Core Grid subject to approval of BNetzA
- Integrated on- and offshore planning

**=> Connection of central H2 sources with the main consumption centers and storage**

## Two step approach

### I. Scenario-based development of a basic network for hydrogen

- Predictability for producers, traders and consumers
- Enables the rapid development of a hydrogen economy

### II. Integrated network planning of natural gas and hydrogen networks in a regular planning process

- Enables cost-effective conversion of natural gas pipelines to hydrogen
- Creates the basis for continued high security of supply
- Creates predictability for market participants through a transparent process

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